Integrated Safeguards (IS)
GLOSSARY

Air sampling
The collection of samples of air to measure the radioactivity or to detect the presence of radioactive material, particulate matter, or chemical pollutants in the air.

AP Declaration
A List of those peaceful nuclear or nuclear-related activities disclosed by the United States to the IAEA for verification. The IAEA may request complementary access to verify the completeness or correctness of declared activities.

Additional Protocol Reporting System (APRS)
The web-based, unclassified virtual private network and database management system developed and operated by the DOC for collecting, processing, storing, and distributing AP Declarations and associated information. The APRS shall be used to aggregate all declared activities submitted by the U.S. Lead Agencies into a proposed AP Declaration, or subsequent update, for interagency reviews and approvals.

At or near
With regard to IAEA access, the proximity (or relative position, space, or time) of DoD locations, sites, or facilities or associated information or activities of direct national security significance to an eligible or potentially eligible facility, or a declared or potentially declarable activity.

Atomic energy
Energy released in nuclear reactions. Of particular interest is the energy released when a neutron initiates the breaking up or fissioning of an atom's nucleus into smaller pieces (fission), or when two nuclei are joined together under millions of degrees of heat (fusion). It is more correctly called nuclear energy.

Background radiation
Radiation from cosmic sources; naturally occurring radioactive materials, including radon (except as a decay product of source or special nuclear material) and global fallout as it exists in the environment from the testing of nuclear explosive devices. It does not include radiation from source, byproduct, or special nuclear materials regulated by the Nuclear Regulatory Commission. The typically quoted average individual exposure from background radiation is 360 millirems per year.

Beryllium (in reactor operations)
Beryllium is a low-density, gray metal used in many industries because of its high permeability to x-rays, light weight, and high tensile strength. Beryllium is a source of neutrons when bombarded with alpha particles; it is used as a neutron reflector, as a neutron moderator, and,

when used in a mixture with plutonium or americium, as a neutron source in nuclear reactors. Beryllium is also used in aerospace structures and inertial guidance systems.

Centrifuge
A rotating cylinder that employs centrifugal force to separate isotopes in a gaseous form.

Closed-down facility or Closed-down location outside facilities
An installation or location where operations have been stopped and the nuclear material removed but which has not been decommissioned.

Complementary access visit or inspection
Article 4 specifies the U.S. AP's provisions for allowing IAEA inspectors to request complementary access for purposes of "[assuring] the absence of undeclared nuclear material and activities." IAEA inspectors also have the right to request complementary access on short notice to pursue questions relating to compliance and the possible diversion of nuclear material for weapons use. The United States foresees no circumstances under which the IAEA would have a reason to request complementary access in this country.

Comprehensive Nuclear Test-Ban Treaty (CTBT)
International agreement, signed by the United States on September 24, 1996, which places a global ban on all nuclear explosions. Also includes an extensive international monitoring system, a data center, and an information collection and monitoring network.

Containment
Structural features of a nuclear facility or equipment which enable the IAEA to establish the physical integrity of an area or item by preventing undeclared access to or movement of nuclear or other material; or interference with the item, IAEA safeguards equipment, or data. Examples are the walls of a storage room or of a storage pool, transport flasks (i.e., casks), and storage containers. The continuing integrity of the containment itself is usually assured by seals or surveillance measures (especially for containment penetrations such as doors, vessel lids, and water surfaces).

Decommissioned facility or Decommissioned location outside facilities
An installation or location at which residual structures and equipment essential for its use have been removed or rendered inoperable so that it is not used to store and can no longer be used to handle, process or utilize nuclear material.

Defense Equity
<u>Activities of direct national security significance</u>: Any current or former DoD Component activity associated with military, national security, or homeland defense capability or intent including but not limited to operations and training; intelligence; materiel production, maintenance, and supply; research, development, test, and evaluation; and infrastructure support, manning, or readiness.

Locations, sites, or facilities or associated information or activities of directional security significance: Any current or former DoD-owned, -leased, - funded, -used space, structure, facility, installation, or land occupied by, or associated with, national security or homeland defense, including but not limited to military operations or training; intelligence; materiel product, maintenance, or supply; research, development, test, or evaluation; infrastructure or personnel.

Information associated with activities of direct national security significance: Any unclassified or classified information (including data, text, drawings, or graphics) that is communicated or recorded in any form (including hardcopy, electronic or softcopy, verbal, or as imagery, signals, or materials) related to national security or homeland defense, including but not limited to military operations or training; intelligence; materiel production, maintenance, or supply; research, development, test, or evaluation; infrastructure or personnel.

Personnel-related activities, locations, or information: Including but not limited to hospitals or medical care, administration, housing, mess, or community activities or facilities associated with military personnel or their families.

Design information
The U.S.-IAEA Safeguards Agreement, in Article 43, and the Protocol to that Agreement, in Article 6, state with respect to each facility identified by the IAEA that the United States is to provide the following information, when applicable: a) "[refers to standard identification information]; b) a description of the general arrangement of the facility with reference, to the extent feasible, to the form, location, and flow of nuclear material, and to the general layout of important items of equipment which use, produce, or process nuclear material; c) a description of features of the facility relating to material accountancy, containment, and surveillance; and d) a description of the existing and proposed procedures at the facility for nuclear material accountancy and control, with special reference to material balance areas established by the operator, measurements of flow, and procedures for physical inventory taking."

Dual-use commodities
Material and industrial equipment with non-nuclear industrial applications that would be of significant value if used in a nuclear explosives program or in a nuclear fuel cycle activity.

Effective kilogram
Special unit of measurement used in safeguarding nuclear material; obtained by: a) for plutonium, the weight of plutonium in kilograms; b) for enriched uranium of 1% and greater, multiplying its weight in kilograms by the square of its enrichment; c) for uranium with an enrichment between 0.5–1.0%, multiplying its weight in kilograms by 0.0001; and d) for depleted uranium with an enrichment of less than 0.5% and for thorium, multiplying its weight by 0.00005.

Eligible facilities list (EFL)
The list of facilities containing special fissionable material, or nuclear source material, that the United States makes eligible for IAEA Safeguards; a facility is subject to IAEA Safeguards when selected from the list by the IAEA.

Facility
A reactor, critical facility, conversion plant, fuel fabrication plant, reprocessing plant, isotope separation plant, separate storage installation, or any location customarily using more than 1 effective kilogram of nuclear material.

Highly enriched uranium (HEU)
Uranium enriched to more than 20% of the isotope uranium235.

Host Team
The group of designated government representatives responsible for accompanying and negotiating with the IAEA inspection team.

IAEA Information Circular (INFCIRC)
Primary means whereby the IAEA publishes documents, including agreement texts.

Integrated Nuclear Safeguards (INS)
The combination of nuclear safeguards applied by the IAEA under both a country's safeguards agreement and its additional protocol.

Lead agency
The executive department or agency having jurisdiction over locations of declarable activities and/or national security equities as well as responsibility for implementation of the AP's requirements to provide information or declarations to the IAEA and/or to arrange for and provide complementary access. U.S. lead agencies for the AP are: DOE, DoD, DOC, DOC, CIA, and NRC.

Location outside facility
Any installation or location, which is not a facility, where nuclear material is customarily used in amounts of 1 effective kilogram or less.

Location-specific environmental sampling
The collection of environmental samples (e.g., air, water, vegetation, soil, smears) at, and in the immediate vicinity of, a location specified by the Agency for the purpose of assisting the Agency to draw conclusions about the absence of undeclared nuclear material or nuclear activities at the specified location.

Low enriched uranium (LEU)
Uranium enriched to less than 20% of the isotope uranium235.

Managed access
Procedures to avoid compromise of national security, proprietary, or proliferation-sensitive business information, or safety requirements while facilitating IAEA access to activities, locations, or information relevant to demonstrating U.S. compliance with Integrated Safeguards. As provided by Article 7 of U.S. AP, the types of managed access measures the United States intends to employ include: removing sensitive papers from offices; shrouding sensitive equipment, displays, and stores; logging off computer systems and turning off data indicating devices; restricting safeguards equipment or environmental sampling to the purposes of access; restricting access to sensitive areas only during specified times; pre-planning the manner in which inspectors are escorted onto a site and from area-to-area, building-to-building, and room-to-room; limiting inspector access to personnel by dismissing non-essential personnel; and giving only individual inspectors access to certain parts of an inspection location (in exceptional circumstances). This list is not exhaustive, and other measures consistent with lead agency guidance may also be appropriate.

National security exclusion (NSE)
Legal provision of the U.S. AP, the United States will permit the IAEA to apply the provisions of the Protocol "excluding only instances where its application would result in access by the Agency to activities with direct national security significance to the United States or to locations or information associated with such activities."

Nuclear fuel cycle-related research and development activities
Those activities which are specifically related to any process or system development aspect of any of the following: conversion of nuclear material, enrichment of nuclear material, nuclear fuel fabrication, reactors, critical facilities, reprocessing of nuclear fuel, processing (not including repackaging or conditioning not involving the separation of elements, for storage or disposal) of intermediate or high-level waste containing plutonium, high enriched uranium or uranium-223, but do not include activities related to theoretical or basic scientific research or to research and development on industrial radioisotope applications, medical, hydrological and agricultural applications, health and environmental effects and improved maintenance.

Nuclear material
Any source or special fissionable material as defined in Article XX of the IAEA Statute; does not apply to ore or ore residue.

Nuclear Treaty Manager
Designated by the USD(AT&L) to oversee implementation and compliance for each existing and prospective arms control agreement covered in DoDI 2060 (including the AP).

Site
That area delimited by the United States in the relevant design information for a facility, a closed-down facility, a location (or closed-down location) outside facilities where nuclear material is/was customarily used. It shall also include all installations co-located with the facility or location for the provision or use of essential services, including hot cells for processing

irradiated materials not containing nuclear material, installations for the treatment, storage and disposal of waste, and buildings associated with specified items.

Source Material
Uranium containing the mixture of isotopes occurring in nature; uranium depleted in isotope 235; thorium; and any of the foregoing in the form of metal, alloy, chemical compound, or concentrate.

Special fissionable material
Plutonium239, uranium233, uranium enriched in the isotopes of 235 or 233, or any material containing one or more of the foregoing material.

Subsidiary Arrangements
The U.S. AP allows either the member state or the IAEA to negotiate a subsidiary arrangement specifying the allowable procedures for implementing certain provisions. Subsidiary arrangements will enter into force no later than 90 days after either the state or the IAEA communicates the need for negotiating such an arrangement. The United States negotiated a subsidiary arrangement on managed access, specifying the purposes for which the United States intends to manage access and types of measures it intends to employ. This subsidiary arrangement entered into force at the same time as the U.S. AP.

United States-IAEA Additional Protocol (U.S.-IAEA AP)
The unique provisions contained in the U.S. AP recognize the United States as an NWS. They include the right to invoke the NSE and to manage access. The NSE allows the United States to continue its longstanding policy of exempting from declaration or access all activities, locations, and information with direct national security significance. All DoD programs, sites, activities, and other equities are exempted under the NSE.

United States-IAEA Safeguards Agreement
The U.S.-IAEA Safeguards Agreement was signed on November 18, 1977 and entered into force on December 9, 1980. This agreement is frequently referred to as the “Voluntary Offer Agreement” or as the “Voluntary Offer.” Under the U.S. Safeguards Agreement, the United States volunteered more than 270 commercial and government nuclear facilities. Currently, the IAEA inspects two of these facilities on a monthly basis.

Wide-area environmental sampling
The collection of environmental samples (e.g., air, water, vegetation, soil, smears) at a set of locations specified by the Agency for the purpose of assisting the Agency to draw conclusions about the absence of undeclared nuclear material or nuclear activities over a wide area.

93 + 2 Program
A commonly used name for the Strengthened Safeguards Program; refers to the year (1993) the IAEA began work on this plan of action, and to the goal to present the plan two years later at the 1995 NPT Review Conference.